

REMARKS

Upon entry of this amendment, claims 1, 5, 9-11, 21 and 22 are all the claims pending in the application. Claims 2-4, 6-8 and 12-20 have been canceled by this amendment. Claims 21 and 22 have been added as new claims. No new matter has been added.

I. Specification and Drawings

Applicants note that minor editorial changes have been made to the specification and to the drawings in order to correct typographical errors therein. No new matter has been added.

In particular, regarding the specification, Applicants note that in paragraphs [0073], [0074], [0115], [0116], [0127] and [0128] of the specification, it was indicated that 120 Hz belongs to the frequency band "E". However, as clearly shown in Fig. 2b of the present application, and as disclosed in paragraphs [0071] and [0102] of the specification, 120 Hz is included within frequency band "D", which has a range from 100 Hz to 125 Hz, not within frequency band "E". Accordingly, Applicants note that the above-identified paragraphs have been amended herein in order to correct this typographical error.

Regarding the drawings, Applicants note that replacement drawings are being submitted herewith for Figs. 4, 5(a), 5(b), 6(a) and 6(b), wherein these drawings have been modified by replacing frequency band "E" with frequency band "D". These changes have been made for the same reasons as discussed above, namely, Applicants note that 120 Hz is included within frequency band "D", not frequency band "E". Approval of the replacement drawings is kindly requested.

I. Claim Rejections under 35 U.S.C. § 102

Claims 1-9 and 11-19 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Aarts et al. (US 6,111,960).

Claim 1, as amended, recites the features of an overtone-generating unit operable to generate, under predetermined conditions, one or more overtone components based on each of the divided components that belong to the several frequency bands; wherein the predetermined conditions include: a condition that a first maximum degree among one or more degrees of the one or more overtone components generated based on a component belonging to a first frequency band among the several frequency bands is not greater than a second maximum degree among one or more degrees of the one or more overtone components generated based on a component belonging to a second frequency band among the several frequency bands, the second frequency band being lower than the first frequency band; and a condition that a third maximum degree among one or more degrees of the one or more overtone components generated based on a component belonging to the highest frequency band among the several frequency bands is less than a fourth maximum degree among one or more degrees of the one or more overtone components generated based on a component belonging to the lowest frequency band among the several frequency bands.

Applicants respectfully submit that Aarts does not disclose or suggest at least the above-noted features recited in amended claim 1.

In particular, regarding Aarts, Applicants note that this reference discloses a circuit for processing an audio signal, wherein the circuit includes multiple band-pass filters 20A-20N,

multiple scaler and harmonic generators 23A-23N, and multiple band-pass filters 24A-24N (see Fig. 9 and col. 9, lines 3-11). In this regard, as disclosed in Aarts, each of the band-pass filters 20A-20N selects a different small frequency band, and harmonics are then generated by the harmonics generators 23A-23N (see col. 9, lines 16-21).

By providing the above-noted band-pass filters 20A-20N and harmonics generators 23A-23N, and thereby dividing the spectrum into small bands and assigning separate harmonics generators to each band, Aarts explains that it is possible to prevent intermodulation from taking place (see col. 9, lines 26-35).

Based on the foregoing description, Applicants note that while Aarts discloses the ability to prevent intermodulation from taking place by providing band-pass filters 20A-20N and assigning an individual harmonics generator for each band, that Aarts does not disclose or suggest the claimed “predetermined conditions” under which overtone components are generated, as set forth in amended claim 1.

In particular, Applicants note that Aarts does not disclose, suggest or otherwise render obvious the features recited in claim 1 of an overtone-generating unit operable to generate, under predetermined conditions, one or more overtone components based on each of the divided components that belong to the several frequency bands; wherein the predetermined conditions include: a condition that a first maximum degree among one or more degrees of the one or more overtone components generated based on a component belonging to a first frequency band among the several frequency bands is not greater than a second maximum degree among one or more degrees of the one or more overtone components generated based on a component belonging to a

second frequency band among the several frequency bands, the second frequency band being lower than the first frequency band; and a condition that a third maximum degree among one or more degrees of the one or more overtone components generated based on a component belonging to the highest frequency band among the several frequency bands is less than a fourth maximum degree among one or more degrees of the one or more overtone components generated based on a component belonging to the lowest frequency band among the several frequency bands.

Accordingly, Applicants submit that amended claim 1 is patentable over Aarts, an indication of which is kindly requested. Claims 5 and 9, as well as new claims 21 and 22, depend from claim 1 and are therefore considered patentable at least by virtue of their dependency.

Regarding claim 11, Applicants note that this claim has been amended so as to recite the features of generating, under predetermined conditions, one or more overtone components based on each of the divided components that belong to the several frequency bands; wherein the predetermined conditions include: a condition that a first maximum degree among one or more degrees of the one or more overtone components generated based on a component belonging to a first frequency band among the several frequency bands is not greater than a second maximum degree among one or more degrees of the one or more overtone components generated based on a component belonging to a second frequency band among the several frequency bands, the second frequency band being lower than the first frequency band; and a condition that a third maximum degree among one or more degrees of the one or more overtone components generated based on a

component belonging to the highest frequency band among the several frequency bands is less than a fourth maximum degree among one or more degrees of the one or more overtone components generated based on a component belonging to the lowest frequency band among the several frequency bands.

For at least similar reasons as discussed above with respect to claim 1, Applicants respectfully submit that Aarts does not disclose, suggest or otherwise render obvious the above-noted features recited in claim 11. Accordingly, Applicants submit that claim 11 is patentable over Aarts, an indication of which is kindly requested.

II. Claim Rejections under 35 U.S.C. § 103(a)

Claims 10 and 20 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Aarts et al. (US 6,111,960) in view of Case (US 6,335,973).

Claim 10 depends from claim 1. Applicants submit that Case fails to cure the deficiencies of Aarts, as discussed above, with respect to claim 1. Accordingly, Applicants submit that claim 10 is patentable at least by virtue of its dependency.

Regarding claim 20, as noted above, this claim has been canceled by this amendment.

III. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited.

If any points remain in issue which the Examiner feels may best be resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Applicants hereby petition for any extension of time which may be required in connection with this communication, and any required fee, except for the Issue Fee, and authorize the Commissioner to charge any such required fee to Deposit Account No. 23-0975.

Respectfully submitted,

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